UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,693	09/29/2003	Steve Zhihua Zeng	1459-0300620	4166

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ART UNIT	PAPER NUMBER
2628	

DATE MAILED: 09/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/673,693	ZENG, STEVE ZHIHUA
	Examiner	Art Unit	
	Jin-Cheng Wang	2628	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _21 August 2006_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _10-21_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _10-21_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Response to Amendments

A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection. Since this application is

eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)

has been timely paid, the finality of the previous Office action has been withdrawn pursuant to

37 CFR 1.114. Applicant's submission filed on 8/21/2006 has been entered. Claims 1-9 have

been canceled. Claims 10, 16-18 have been amended. Claims 19-21 have been newly added.

Claims 10-21 are pending in the present application.

Response to Arguments

Applicant's arguments filed August 21, 2006 have been fully considered but are moot in

view of the new round(s) of rejection set forth in the present Office Action.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or
any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and
requirements of this title.

Claim 10 is rejected under 35 U.S.C. 101 because the claimed invention is directed to

non-statutory subject matter.

The base claim 10 recites incrementing..., decrementing, and determining.... These steps

set forth in the claim 10 are merely mathematical operations at best embodied in a computer

algorithm. Computer algorithm is a non-statutory subject matter. Computer programs claimed as

computer listings per se, i.e., the descriptions or expressions of the programs, are not physical

"things". They are neither computer components nor statutory processes, as they are not "acts"

being performed. Such claimed computer programs do not define any structural and functional

interrelationships between the computer program and other claimed elements of a computer

which permit the computer program's functionality to be realized.

Moreover, the claim 10 merely recites the steps of mathematical operations without any

tangible output/result being rendered/produced. Given the absence of any practical effect or

significant independent physical acts, the applicants' claim fails to adequately define the claimed

invention within the domain of patentable subject matter. The claimed invention as a whole must

accomplish a practical application. That is, it must produce a "useful, concrete and tangible

result." State Street, 149 F.3d at 1373, 47 USPQ2d at 1601-02.

Claim 11 is rejected under 35 U.S.C. 101 because the claimed invention is directed to

non-statutory subject matter. The claim 11 depends upon the claim 10 and further recites

"accessing the coefficient set and determining a scaled pixel value" which are the mathematical

operations embodied in a computer program. Computer programs claimed as computer listings

per se, i.e., the descriptions or expressions of the programs, are not physical "things". They are

neither computer components nor statutory processes, as they are not "acts" being performed.

Such claimed computer programs do not define any structural and functional interrelationships

between the computer program and other claimed elements of a computer which permit the

computer program's functionality to be realized.

Moreover, the claim 11 merely recites a series of mathematical operations without producing any tangible output/result. Given the absence of any practical effect or significant independent physical acts, the applicants' claim fails to adequately define the claimed invention within the domain of patentable subject matter. The claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." State Street, 149 F.3d at 1373, 47 USPQ2d at 1601-02.

Claim 12 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claim 12 depends upon the claim 11 and recites "accessing the coefficient set and determining a scaled pixel value" under a set of conditions which are the mathematical operations embodied in a computer program. Moreover, the claim 12 merely recites a series of mathematical operations without producing any tangible output/result. The claim 12 is subject to the same rationale of rejection set forth in the claim 11.

Claim 13 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claim 13 depends upon the claim 12 and recites "reversing the coefficients" which are the mathematical operations embodied in a computer program. Moreover, the claim 13 merely recites a series of mathematical operations without producing any tangible output/result. The claim 13 is subject to the same rationale of rejection set forth in the claim 12.

Claim 14 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claim 14 depends upon the claim 10 and recites "receiving the

predetermined amount" which are the mathematical operations embodied in a computer program. Moreover, the claim 14 merely recites a series of mathematical operations without producing any tangible output/result. The claim 14 is subject to the same rationale of rejection set forth in the claim 10.

Claim 15 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claim 15 depends upon the claim 10 and recites "determining the predetermined amount" which are the mathematical operations embodied in a computer program. Moreover, the claim 15 merely recites a series of mathematical operations without producing any tangible output/result. The claim 15 is subject to the same rationale of rejection set forth in the claim 10.

Claim 16 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The base claim 16 recites algorithm means for performing the steps set forth in the claim 10. Computer algorithm is a non-statutory subject matter. Computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical "things". They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized.

Moreover, the claim 16 merely recites a series of mathematical operations without producing any tangible output/result. Given the absence of any practical effect or significant

independent physical acts, the applicants' claim fails to adequately define the claimed invention within the domain of patentable subject matter. The claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." State Street, 149 F.3d at 1373, 47 USPQ2d at 1601-02.

Claim 17 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The base claim 17 merely recites mathematical operations without tangible output/result being produced.

Given the absence of any practical effect or significant independent physical acts, the applicants' claim fails to adequately define the claimed invention within the domain of patentable subject matter. The claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." State Street, 149 F.3d at 1373, 47 USPQ2d at 1601-02.

Claim 18 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claim is directed to a computer readable media storing control information for implementing a plurality of operations. First of all, the claimed computer readable storage media has not been claimed to be employed as a computer component. Secondary, "control information" does not constitute the computer-executable instructions for performing the steps set forth in the claim 10.

Currently the claim is directed to operations that may be recorded on paper that is readable by a computer via a scanner which computer program is for performing the claimed method. The claim needs to be amended to claim "A computer-readable storage medium encoded with computer-executable instructions causing a computer to perform the steps of" or in a similar way to ensure the computer-readable storage medium is being employed as a computer component.

Claim 18 is further rejected under 35 U.S.C. 101 for the lack of tangible output/result. The claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." State Street, 149 F.3d at 1373, 47 USPQ2d at 1601-02.

Claim 19 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The base claim 19 recites the steps of storing X set of coefficients and determining a number of used filter phases. These steps set forth in the claim 19 are merely mathematical operations at best embodied in a computer algorithm. Computer algorithm is a non-statutory subject matter. Computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical "things". They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized.

Moreover, the claim 19 merely recites the steps of mathematical operations without any tangible output/result being rendered/produced. Given the absence of any practical effect or significant independent physical acts, the applicants' claim fails to adequately define the claimed invention within the domain of patentable subject matter. The claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." State Street, 149 F.3d at 1373, 47 USPQ2d at 1601-02.

Claim 20 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claim 20 depends upon the claim 19 and further recites "right shifting the number of output pixels" which is an additional mathematical operation being performed by the algorithm. The claim 20 is subject to the same rationale of rejection set forth in the claim 19.

Claim 21 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claim 21 depends upon the claim 19 and further recites "selecting N filter phases" which is an additional mathematical operation being performed by the algorithm. The claim 21 is subject to the same rationale of rejection set forth in the claim 19.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 10-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with

the enablement requirement. The claim(s) contains subject matter which was not described in

the specification in such a way as to enable one skilled in the art to which it pertains, or with

which it is most nearly connected, to make and/or use the invention. For example, the base claim

10 recites "decrement, in response to the first adjusted value being greater than a second

variable, the adjusted value by one or **more times** the second variable indicative of the number

of output pixels in the scaling cycle". However, applicant's specification (See Paragraph 0027)

only describes decrement the adjusted value (CURRENT_PHASE) by the second variable (L).

Applicant's specification has not enabled the claim limitation decrement, in response to the first

adjusted value being greater than a second variable, the adjusted value by two times the second

variable (2L). The claims 11-15 depend upon the claim 10 and are rejected due to their

dependency on the claim 10. The claims 16-18 are subject to the same rationale of rejection set

forth in the claim 10.

Claims 19-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with

the enablement requirement. The claim(s) contains subject matter which was not described in

the specification in such a way as to enable one skilled in the art to which it pertains, or with

which it is most nearly connected, to make and/or use the invention. For example, the base claim

19 recites "storing X sets of coefficient representing 2X+1 available filter phases, where X is a

positive integer". However, applicant's specification (See Paragraph 0011) describes nine sets of

coefficients to be provided to support the 17 available phases. For 17 available phases, X is equal

to 8. However, nine sets of coefficients are described/stored in a memory instead of 8 sets of

coefficients being described or stored.

The claims 20-21 depend upon the claim 19 and are rejected due to their dependency on the claim 19.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 10-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For example, the base claim 10 recites "incrementing a current phase location within a scaling cycle by **a first variable** to obtain **a first adjusted value**...decrementing, in response to **the first adjusted value** being greater than **a second variable**, the first adjusted value by one or more times the second variable...to obtain a second adjusted value". The claim limitation of "a first variable" renders "a first adjusted value" indefinite, which again renders "a second adjusted value" indefinite. Although the first variable is **indicative of** a number of input pixels in the scaling cycle, the first variable may be **a function** (indicative of) of the number of input resolution divided by GCD wherein the function is still a variable because such a function is uncertain, rendering the claim 10 indefinite. The claim 10 starts manipulating "a first variable" which is – **a function** of the input resolution divided by GCD – <u>indicative of</u> the number of input pixels, resulting in an indefinite number. The claim limitation of "a first adjusted value" is obtained based on "a first variable", which again is another variable – as opposed to a definite number –a number that cannot be determined. Moreover, "a second adjusted value" depends upon "a second variable" – **a function** of the output resolution divided by GCD – <u>indicative of</u>

the number of output pixels, resulting in an indefinite number. The claim 10 thus failed to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims 11-15 depend upon the claim 10 and are rejected due to their dependency on the claim 10.

The claim 16 is subject to the same rationale of rejection set forth in the claim 10.

The claim 17 is subject to the same rationale of rejection set forth in the claim 10.

The claim 18 is subject to the same rationale of rejection set forth in the claim 10.

Claim 19 recites the limitation "the number of available phases" in line 4-5 of the claim. There is insufficient antecedent basis for this limitation in the claim. The claim 19 further recites "N **filter phases**" in line 7 of the claim. It is not clear whether N filter phases refer to available **filter phases** or used **filter phases** set forth earlier in the claim. Clarification is required.

The claims 20-21 depend upon the claim 19 and are rejected due to their dependency on the claim 19. The claim 20 further recites a notation "S" without giving any definition in the claim. Clarification is required.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jin-Cheng Wang whose telephone number is (571) 272-7665. The examiner can normally be reached on 8:00 - 6:30 (Mon-Thu).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on (571) 272-7794. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jcw